

Session X

Proper Equipment Care and Maintenance



Radiological Preparedness & Emergency Response

Care and Maintenance of the Thermo Scientific Radeyes



Objectives

- Describe proper equipment care and maintenance of detectors in general.
- Describe the proper use and care for RADEYE G and RADEYE B20ER detectors.



General Rad. Detector Care

Radiation detectors are not as sensitive to the environment as they used to be

Hotter = more sensitive and noisy

Colder = less sensitive

Big problem 25 years ago - Much more stable today

Now the batteries probably fail first

Bang it – you get a few clicks – no meter to break

Bang a pancake and it may go bang on you!

Wash it - OK – but NOT a detector with a grill !

Maintenance

Calibration - Once a year or as defined by procedure

Source Check – Periodic – as defined by procedure

Batteries OK in unit - if stored the right way

Keep Clean – De-Con with mild solutions is OK

Store in Moderate Conditions - Keep In Pelican Case

Perform basic function tests before use

Know the likely background reading for each unit

Thermo RadEye Series - Specs

- The RadEye G-10 is sensitive to gamma radiation and used for safety and surveys for gamma radiation over a wide range
 - Can detect gammas from 1uR/h to 10R/h, responding in seconds
 - Weighs 150g (5 oz.) including battery.
- Dimensions are: 97 x 60 x 30 mm (3.4" x 2.8" x 1.2") not including holster.
- Operating Temperature range of -30° C to +50° C (-22° F to +122° F) . Humidity OK to 100% (non-condensing)

Thermo RadEye - Specs

- Meets IP67 standards for water tightness, 0 to 100% humidity
- Meets ANSI drop test standard of 1.5m onto concrete
- Will operate for approximately 600 hours on two easily changed standard “AAA” alkaline batteries

Changing RadEye Batteries

- 2 regular or re-chargeable (NiMH or NiCad) AAA batteries
- Pull back rubber bumper at battery end. Just the two squares.
- No need to remove the bumper
- Use coin or flat screwdriver or strong thumbnail to open latch
- Battery orientation is marked
- Non-volatile data memory – No stored data or settings will be lost

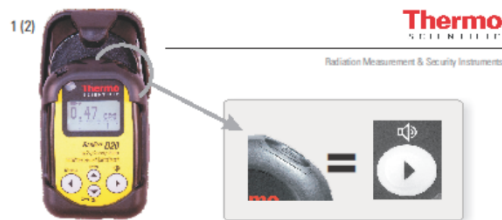


RadEye - Switch on Screen

- Press “ON” button for 1 second
- Switch on Screen will appear for a few seconds



Short Manual - RadEye B20 (ER)



	Function	Button	Press
ON/OFF	Power up		1 x long
	Power down		3 x short
Key	Activate key lock		1 x long
	Deactivate key lock		→ →
	Mean and max. count rate information		1 x short
	Display illumination		1 x short

Thermo Fisher Scientific Messtechnik GmbH - 2010-10-12 - Short Manual RadEye B20 - Rev A - Ba/Fra - DM_RadEyeB20_V1.0.CDR



	Function	Button	Press
	Activate finder mode		2 x short
	Deactivate finder mode		2 x short

Button	Press	RadEye B20 reaction
	1 x short	

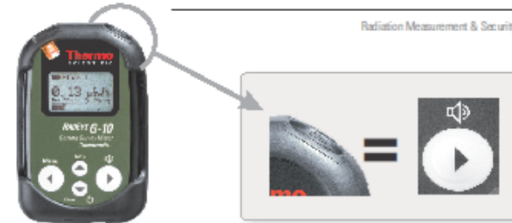
Thermo Fisher Scientific Messtechnik GmbH - 2010-10-12 - Short Manual RadEye B20 - Rev A - Ba/Fra - DM_RadEyeB20_V1.0.CDR

RadEye G Manual

1 (2)

Thermo
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Radiation Measurement & Security Instruments




Function Button Press

ON/OFF	Power up		1 x long
	Power down		3 x short
KEY	Activate key lock		1 x long
	Deactivate key lock		
	Accumulated dose		1 x short
	Display illumination		1 x short

Thermo Fisher Scientific Messtechnik GmbH - 2010-02-08 - Short Manual RadEye G-10 - Rev A - Ba/Fro - SM_RadEyeG-10_V1.0.CDR

RadEye G Ref Guide

QUICK REFERENCE GUIDE RADEYE G-10



LED **Acknowledge**

Dose Rate Alarm 1:
SLOW blinking LED, 2 frequency tone, slow vibration

Dose Rate Alarm 2:
FAST blinking LED, continuous tone, slow vibration

Dose Alarm 1 and Dose Alarm 2:
Continuous LED and tone, slow vibration

To silence alarm tone and stop vibrations Press **▶** button or ***Acknowledge*** button

TURN ON

Press and hold **▼** until audible beep is heard

DOSE, MEAN/MAX DOSE RATE

- Press **▲** to view accumulated dose
- Press **▲** again to view mean and max dose rate
- Press **◀** to reset mean/max dose rate
- Press **▲** to return to dose rate display

TO CLEAR DOSE

- Press **◀** to access menu, press **▲** or **▼** to scroll to "Clear Dose" and press **◀** to select
- Press **◀** again to select "Yes"
- Press **◀** again to confirm "Yes"

TO CHANGE DOSE OR DOSE RATE ALARM SETTINGS

- Press **◀** to access menu, press **▲** or **▼** to scroll to "Alarm Dose" or "Alarm Dose Rate" and press **◀** to select
- Press **◀** or **▶** to move cursor and **▲** or **▼** to change selected value
- Press **▶** to scroll until "Exit" is displayed, press **▶** to exit
- Press **◀** to save changes

TURN OFF

- Press **◀** to access menu, "Switch off" will be highlighted in menu
- Press **◀** again to select "Yes"
- Press **◀** again to confirm "Yes"

RV G10100K version 1.0 2010-01-22

RadEye Maintenance

- Calibration
- Source check
- Batteries
- Clean
- Store
- Function
- Background



RadEye Care

- Bumper and Top Button
- Battery leakage - Low Batt. 10 + Hours
- Drop RadEye G – 5 Feet onto concrete
- Drop RadEye B20 – POP ! – Bumper
- Clean G – OK
- Clean B20 – Not Grill – Mica Window
- Keep off of vehicle dashboard - HOT



RadEye Checks

- Switch on – beep, vibrate, display, cal date
- Heartbeat or displayed fault
- Batt. condition – unit temp
- Background
- Source check.



Summary Points

- Switch on tests
- Cal and source check
- Keep under 122 degrees
- Drop and Wash criteria
- Be careful removing the bumper
- RadEyes check themselves

Any Questions?

- Technical contact
- Thermo Fisher Scientific
- Mark Deacon
- 440-487-6427
- mark.deacon@thermofisher.com
- General Tech Support #
- 1-800-274-4212 opt #4

